

DDU 210

Dashboard - TFT color display



The DDU 210 is a combined dashboard and input module for use as a stand-alone display unit or as an integral part of a complete data acquisition and monitoring system for use in the demanding environment to be found in motorsports vehicles.

The DDU 210 is equipped with a complete range of analogue and digital inputs and ten-page liquid crystal display with configurable windows for an easily configured and personalised screen layout. A graphical bar indicator is typically used for representing engine revs.

As part of the Magneti Marelli data acquisition and telemetry system, the DDU 210 can communicate over a CAN network with a range of data loggers receiving and displaying data from the logger as well functioning as an additional input module.

It is also available a version (DDU 310-DL32/64) with internal data logger (32 or 64 Mbyte).

For further information or different solution, please contact our technical department.



Technical data

Analogue inputs

Single-ended (0 to 5 V)	5
NTC/PT1000 temperature sensor (SW selectable)	2
NTC internal temperature sensor	1

Digital inputs

Pick-ups magnetic or Hall effect (RPM)	1
Hall effect (wheelspeed)	3
On/Off digital	2
Lap Trigger	2
"Code Load" enable pin	1

Outputs

Voltage references (@ 5 V)	1
Low-side (@ 12 V)	2
Shift Lamp (adjustable brightness)	6
max output current	70 mA
Alarm (adjustable brightness)	2
max output current	70 mA

Communications

CAN line (1 Mbit/s (*))	2
Ethernet line (10/100 Mbit/s)	1
RS232	1

Note:

(*) Configurable on request

Mechanical/Electrical characteristics

Power supply	
total system operating	10 to 18 V
Operating temperature range (internal)	0 to 60 °C
Vibrations range tested (30 to 1500 Hz)	10 g
EMI immunity tested (1 to 400 MHz)	200 mA
Protection class	IP 65
Transflective dot matrix color display	TFT 6.2"
Connectors	
AS214-35 PN 919Y	37 pin
Dimensions	
without connector	188 x 110 x 34.4 mm
with connector	188 x 110 x 59.2 mm
Weight	580 g

Logic core

Microcontroller A (80 MIPS RISC)	1
Microcontroller B (64 MIPS RISC)	1
FPGA (50k gates)	1
Graphic display controller	1
DPR	32 Kbyte
Flash E2PROM (microcontroller A)	1 Mbyte
RAM memory (microcontroller A)	48 Kbyte
Flash memory (microcontroller B)	512 Kbyte
Ram memory (microcontroller B)	4 Kbyte
Flash NV Ram	32 Mbyte
RAM memory	512 Kbyte
E2PROM	32 Kbyte
Time keeper	1

Ordering Information

Label	Description	Order code
DDU 210	Dashboard - TFT color display	083818171800

For further details please contact

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Characteristics

- 5 Single-ended
- 1 Pick-ups or Hall effect
- 3 Hall effect
- 2 CAN communication buses
- 1 Ethernet line
- Floating point data management

Main Features

- Page and channel name labels
- Transmit internal diagnostic over CAN bus
- 48 alarm channels with programmable thresholds
- Display dedicated to 48 internal channels
- Lap time message displayed on dedicated page
- PC interface via Ethernet for loading graphical layout
- Easy to use and configure
- Designed for rugged applications

Benefits

- TFT 6.2" transfective dot matrix color display
- Graphical engine revolution counter with configurable non-linear scale
- Alarm condition displays channel name and value (with priorities for multiple alarms)
- Backlight regulation based on internal photocell
- Inputs configurable to suit all sensors in the product range
- 2 push-button on the front panel for page selection, alarm level set, rpm/speed conversions, message hold time
- 6 high-brightness warning lights yellow/red for gear change (with programmable threshold) and 2 blue for general alarm condition indication
- 2 outputs for external warning lamps with short-circuit protections

CAN Communication

- Partial time (only for SRA DL) up to 16 sections
- Differential time (only for SRA DL) between current partial time and the one of the best lap

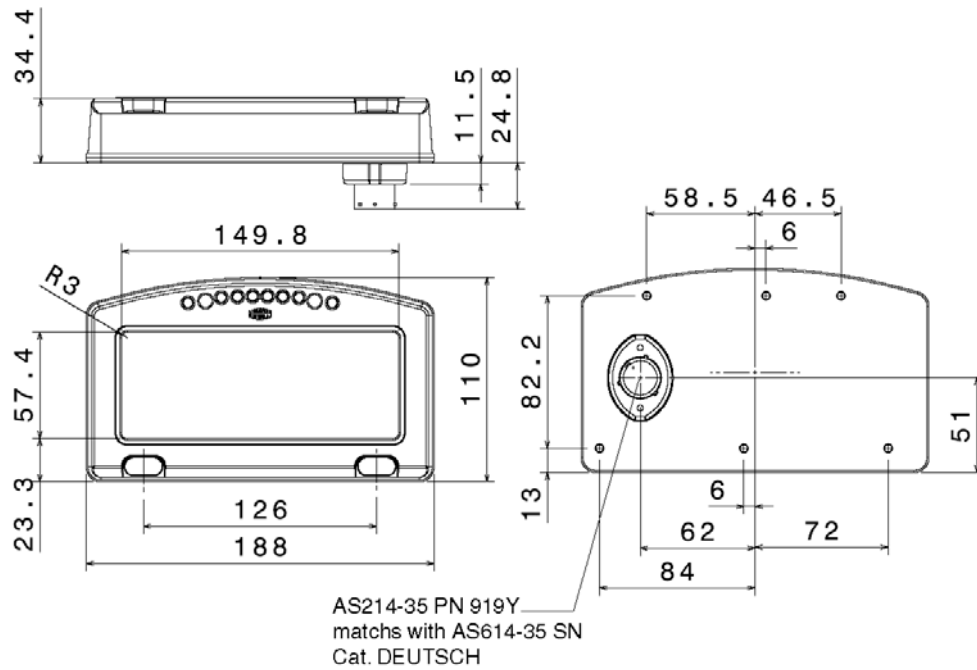
Stand alone mode

- Direct connection to 11 sensors (active and passive)
- Beacon input for lap time measurement
- Lap total counter

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Dimensions



Dimensions in millimetres

Connector Pin Out

DDU 210 pin-out: AS214-35PN 919Y								
Pin	Name	Descr.	Pin	Name	Descr.	Pin	Name	Descr.
1	Vbattp	Positive Battery Supply	14	EXT_VREF_OUT	External Voltage Reference Out (5 V)	27	GND_HALL	Ground Hall
2	Vbattn	Negative Battery Supply	15	EXT_AGND_OUT	External Analogue Ground Out	28	EXT_BUTTON_3	External Button3
3	CAN1_H_CONN	CAN1 Serial Line (H); Communication line with ECU	16	SE_ADI_1	Single Ended Input 1 (0 to 5V)	29	EXT_BUTTON_4	External Button4
4	CAN1_L_CONN	CAN1 Serial Line (L); Communication line with ECU	17	SE_ADI_2	Single Ended Input 2 (0 to 5V)	30	OUT_LOWSIDE1	Output Low-side1 (12 V)
5	CAN2_H_CONN	CAN2 Serial Line (H)	18	SE_ADI_3	Single Ended Input 3 (0 to 5V)	31	OUT_LOWSIDE2	Output Low-side2 (12 V)
6	CAN2_L_CONN	CAN2 Serial Line (L)	19	SE_ADI_4	Single Ended Input 4 (0 to 5V)	32	IN_PICKUP_P	Electromagnetic Pick-up Positive In-Hall4
7	TX_ETH_P	TX_P Ethernet 10/100 Base T	20	SE_ADI_5	Single Ended Input 5 (0 to 5V)	33	IN_PICKUP_N	Electromagnetic Pick-up Negative
8	TX_ETH_N	TX_N Ethernet 10/100 Base T	21	IN_TEMP1	NTC-PT1000 Input 1	34	IN_BEACON	Digital Input for Lap Trigger
9	RX_ETH_P	RX_P Ethernet 10/100 Base T	22	IN_TEMP2	NTC-PT1000 Input 2	35	IN_SPLTIME	Digital Input for Lap Trigger
10	RX_ETH_N	RX_N Ethernet 10/100 Base T	23	GND_TEMP	Analogue Ground Temp	36	GND_DIG_IN	Ground Digital Input
11	TXD_RS232	TX RS232 line	24	IN_HALL1	Hall Effect Sensors Input 1	37	IN_ENCP	Enable Code Programming
12	RXD_RS232	RX RS232 line	25	IN_HALL2	Hall Effect Sensors Input 2			
13	GND_RS232	Ground RS232	26	IN_HALL3	Hall Effect Sensors Input 3			

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